



February 15, 2011

Mr. Jeff Zaring
State Board of Education Administrator
Indiana Department of Education
Room 225 State House
Indianapolis, IN 46204

Attention: Mr. Jeff Zaring, Administrator

Dear Dr. Bennett and Members of the State Board of Education,

We respectfully request that the State Board of Education reconsider the assessment of Houghton Mifflin Harcourt's secondary math series: *Holt McDougal Algebra 1, Geometry, and Algebra 2*, and *Holt McDougal Larson Algebra 1, Geometry, and Algebra 2*. Both of these programs were listed as "Unsatisfactory" after review by the Dana Center and Indiana teachers despite conflicting recommendations by the two groups. It is our opinion that the reviews by both groups were subjective and not thorough, and therefore led to inconsistencies and contradictions between the evaluation of individual standards and overall ratings.

To begin, reviewers erroneously deemed Labs and Activities, key elements of the programs, as optional, which was not the intent of the publisher. Labs and Activities are integral to our coverage of the standards, and by not reviewing them the committee missed essential content supporting our coverage of the Standards for Mathematical Practice.

The following are two examples of the subjective overall rating of the textbooks

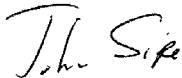
- For *Holt McDougal Algebra 1*, the reviewer assigned a rating score of 3 or 4 (strong rating) for 42 of the criteria, and 1 or 2 (weak rating) for 27 of the criteria yet the summary rating was a 1, the lowest possible score.
- For *Holt McDougal Larson Algebra 1*, the reviewer assigned a rating score of 3 or 4 (strong rating) for 75 of the criteria, and 1 or 2 (weak rating) for another 75 of the criteria, yet the summary rating again was a 1, the lowest possible score.

Attached please find responses to each title in our series, citing specific ratings and responses where possible. Since there was an inconsistency in the amount of detail we were provided from the reviewers, it was difficult for us to provide a thoughtful response to the rating. For some levels we received comprehensive reviews and comments, while for others, we only received partial documentation.

In regard to the Standards for Mathematical Practice, the Dana Center reviewed only a small portion of the overall program in its review of these Standards. Our coverage of the Standards for Mathematical Practice is integrated throughout the program, as the mathematical practices are not equally applicable to every mathematical concept. For a true understanding of how we integrate and provide complete coverage of these standards, the Dana Center would need to review the entire program.

Thank you for reconsidering these Houghton Mifflin Harcourt instructional materials for adoption by the teachers of Indiana.

| Sincerely,

A handwritten signature in dark ink, appearing to read "John Sipe". The signature is written in a cursive, flowing style.

John Sipe
Senior Vice President, National Sales Manager
Houghton Mifflin Harcourt

Response to Review of *Holt McDougal Algebra 1* for the Indiana Mathematics Adoption

Alignment to the Standards for Mathematical Practice

Summary

While the Dana Center rated *Holt McDougal Algebra 1* as Minimal Evidence, we believe that assessment overlooked several key features of the program that strongly support the Standards for Mathematical Practice. Dana Center reviewers also used their own discretion to label some sections, such as Algebra Labs and Technology Labs, as “optional.” That claim is subjective, as the publishers believe these are key instructional elements within the student text. In addition, Dana Center reviewers only reviewed a small portion of the content provided. All mathematical practices are not equally applicable to different mathematical concepts, so many of their responses may have been unfairly biased by looking at an isolated section of material. Specific details relating to each of the standards are noted below. We believe the sum of these constitutes far more than Minimal Evidence.

1. Make sense of problems and persevere in solving them.

Connections among tables, graphs, equations, and situations are consistently made throughout the text (e.g., pp. 240, 263, 303, 430, 610-611, 642-643, 648-649, and 796-797). These connections are embedded in lessons as well as labs.

Words/Numbers/Algebra boxes consistently highlight rules and formulas using multiple representations (e.g., pp. 20-21, 86, 171, 212-213, 361, and 460). The Dana Center notes that there are “some” open-ended questions in the lessons. Actually, every lesson contains Think and Discuss questions in the Student Edition. Furthermore, Questioning Strategies are provided in the Teacher Edition for every example in every lesson. Every exercise set also includes open-ended questions, including those labeled Error Analysis, Critical Thinking, and Write About it. In addition, the Teacher Edition includes a Journal activity and an Alternative Assessment for every lesson. Additional features provide more opportunities for in-depth problem solving. These include the Multi-Step Test Prep (twice per chapter), Real-World Connections (every other chapter), and online Chapter Projects (every chapter).

2. Reason abstractly and quantitatively.

As noted by the Dana Center reviewers, lessons and exercise sets consistently include application problems with “frequent opportunities for student to represent real-world situations in symbols.” Attention to reasonableness and the correct use of units is embedded in the instruction and exercises. In many exercises, students must explain and justify the reasoning of their responses.

3. Construct viable arguments and critique the reasoning of others.

With Think and Discuss, Critical Thinking, and Write About It exercises in every lesson, students are constantly given opportunities to construct arguments and justify their thinking. Error Analysis exercises specifically challenge students to critique erroneous solution processes. The Questioning Strategies in the Teacher Edition offer further support and opportunities to both encourage reflective thought and generate classroom discourse. In addition, the Reaching All Learners feature in every lesson in the Teacher Edition gives further suggestions for cooperative learning and communication (e.g., pp. 140, 337, 467, and 664).

4. Model with mathematics

Holt McDougal Algebra 1 offers students ample opportunities to model mathematical concepts, using both concrete manipulatives and technology. Dana Center reviewers notice this as well, commenting again that these occurred most often in Labs. The publisher reiterates that the Labs are essential instructional components, especially to support the depth of instruction suggested by the Common Core Standards. Modeling opportunities include Algebra tiles (e.g., pp. 510-511), graphing calculators (e.g., p. 274), spreadsheets (e.g., p. 396), simulations (e.g., p. 736), and motion detectors (e.g., p. 238 #17).

5. Use appropriate tools strategically.

While the use of graphing calculators is highlighted in Technology Lab Activities, graphing calculators are integrated into lessons as well (e.g., pp. 370-372, 398, 634-635, 643, 799). Other tools include spreadsheets, simulations, algebra tiles, and motion detectors as noted above.

6. Attend to precision.

As noted by the Dana Center reviewers, examples “use proper notation and are precise;” however, the reviewer notes that there are limited opportunities for students to communicate. We disagree as noted by the inclusion of Think And Discuss, Critical Thinking, and Write About It exercises in every lesson. Further opportunities are given in the Teacher Edition: Questioning Strategies, Reaching All Learners, Journal, and Alternative Assessment for every lesson.

7. Look for and make use of structure.

Holt McDougal Algebra 1 offers ample opportunities for students to develop patterns and analyze structure in algebraic contexts. Patterns are explored both in lessons and labs with and without technology. Examples can be found on pp. 150, 248, 276, 301, 322-323, 368, 460, 472-473, and 632. The structure of algebraic expressions, especially in the context of polynomials and factoring, is extensively explored using physical models, properties, graphs, as well as numerical examples (e.g., 510-511, 513-514, 521, 558-559, and 575). In these cases, patterns are used to generalize rules and formulas and to develop true understanding of the appropriate algorithms.

8. Look for and express regularity in repeated reasoning.

As noted in the response to Standard 7, there is an abundance of the use of patterns to develop mathematical concepts. Think and Discuss questions in the Student Edition and Questioning Strategies in the Teacher Edition constantly build connections among previously learned concepts. In addition, the Multi-Step Test Prep and Real-World Connection features connect a variety of concepts in an engaging problem-solving context (e.g., pp. 118, 164-165, 342, and 454-455).

Content Alignment to the Common Core State Standards for Mathematics

Summary

While *Holt McDougal Algebra 1* received Weak ratings in all categories on the summary page, the source of these ratings is unclear. Scores on the supporting sections were substantially higher, with the text receiving 4s in many categories. This disconnect suggests that *Holt McDougal Algebra 1* deserves a substantially higher rating in all categories.

Important Mathematical Ideas

Reviewer Rating: Weak (1-2)

Reviewer Comment: “Topics tend to be disconnected and taught as isolated topics. There is little taught as multiple approaches (i.e. factoring lesson 8.3-8.5, excluding optional Algebra Labs). Little to no multiple approaches is given.”

Response: The average of all the ratings for Important Mathematical Ideas in the supporting documentation is 3.0. This alone should be enough to earn a rating of Moderate or Strong for this category. We also disagree with the reviewer comments above. Concepts are carefully developed throughout the text to build on each other and to develop a thorough mathematical foundation. Connections are made throughout, both explicitly in the text and in exercises and discussion questions. The reviewers admittedly excluded what they deem “optional” content from their review. Once again, the publisher considers these labs integral to the instructional approach of the program, and the merits of these labs should be fully considered in the rating system. Any other approach is patently unfair. Despite the reviewers’ comment about multiple approaches, multiple approaches are given throughout the book (e.g., pp. 93, 133-134, 337, 414 and 420).

Skills and Procedures

Reviewer Rating: Weak (1-2)

Reviewer Comment: “These were not developed conceptually (i.e. equations 2.1-2.3 and exponents 8-3). The skills were taught in isolation, and the procedure is the primary focus as each new lesson begins with “how-to” and 4-5 worked out examples. Without requiring students to think, they are told to follow step-by-step instructions to solve each problem. (p. 113).

Response: The average of all the ratings for Skills and Procedures in the supporting documentation is 3.0. This alone should be enough to earn a rating of Moderate or Strong for this category. We also disagree with the reviewer comments above. New topics, skills, and procedures are developed carefully and conceptually. In the discussion of Lessons 2.1-2.3, the reviewer fails to note that the section is preceded immediately by a modeling activity involving algebra tiles and that a technology activity bridges the concepts of Lesson 2.2 and 2.3 together. Similarly Lesson 8.3 is immediately preceded by a two-page algebra tiles activity. The reviewer's focus on internal lesson content destroys the instructional integrity of the program. The publisher would never advise teachers and students to skip critical content elements. Again the reviewer over-generalizes by stating that "each new lesson begins with 'how-to'..." Counterexamples to this statement abound (e.g., p. 240, 276, 361, and 369). The final reviewer comment neglects to note that the "step-by-step instructions" do not begin the lesson; rather they follow one and a half pages of conceptual development.

Mathematical Relationships

Reviewer Rating: Weak (1-2)

Reviewer Comment: "Most problems only require the use of skills and procedures focused on in that lesson. Critical thinking and error analysis type problems are presented late in the problem set instead of being incorporated early in the learning to reinforce conceptual understanding (lesson 6-4 – critical thinking #29 and error analysis #31)."

Response: The average of all the ratings for Mathematical Relationships in the supporting documentation is 2.6. This alone should be enough to earn a rating of Moderate for this category. The reviewer comment is an over-generalization. Exercise sets routinely incorporate lesson concepts as well as previously learned skills. In addition, examples and exercise sets frequently make connections with other math topics, including geometry, finance, and data analysis (e.g., pp. 109, 365, and 518). In addition, every exercise set includes Spiral Review, which reviews previously learned concepts and primes students for the successive lesson. The reviewer also fails to note that conceptually driven Think and Discuss questions precede every exercise set.

Overall Rating

Reviewer Rating: Weak (1-2)

Reviewer Comment: "An alternative approach is presented in the Algebra Labs; however, they are not integrated into the lessons themselves. This book focuses on just the skills and procedures without the big ideas and connections."

Response: The average of all the ratings for Overall Rating in the supporting documentation is approximately 2.8. This alone should be enough to earn a rating of Moderate for this category. Once again, the reviewer comment effectively dismisses all content provided in the Algebra Labs because they are not "integrated" into the lessons.

This selective reviewer approach is patently unfair as it presupposes a specific implementation on the textbook and disregards much of the high-quality content that is included in the book.